

Environmental Assessment Questions

I. Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

Response: Yes, as detailed below, Entergy Louisiana, LLC (ELL) has carefully evaluated the potential and real adverse environmental effects of the proposed facility and these effects have been avoided to the maximum extent possible. Potentially adverse environmental impacts due to the construction and operations of the new Waterford Dispatchable Black Start Unit have been avoided to the maximum extent possible.

A black start generator is used to restore power to the electrical grid following an event that results in the total loss of the electrical system. Most large electric generating units need some amount of external electric power in order to start. Black start units, which do not have this need, are used to provide that power. The proposed Waterford 4 Dispatchable Black Start unit will be capable of starting, electrically connecting to the grid, and providing full generation capacity, fueled by diesel oil, for a central steam plant start-up without the availability of system electrical power. The proposed Waterford 4 Dispatchable Black Start unit would be started, connected to the start-up power source and provide emergency electrical service to start-up either Waterford Units 1 or 2 in the initial phase of system restoration to re-energize the transmission system following a loss of the transmission system in the Amite South region of the Entergy System.

Prior to Hurricane Katrina, the black start capability for the Amite South transmission region was provided by the Paterson Unit 5 ("Paterson 5"), a Frame 5 combustion gas turbine capable of starting Paterson Unit 3 ("Paterson 3") or Michoud Unit 1 ("Michoud 1") in a sequence to restore the electrical system. However, as a result of the damage sustained during Hurricane Katrina, coupled with the flooding that occurred at the Paterson site, Entergy has elected to defer making any repairs to the Paterson 5 combustion turbine; at this time, it is being considered a total loss.

The potential environmental impacts of the proposed facility are:

Air

The air emissions from the Waterford Dispatchable Black Start Unit will result primarily from the combustion turbine and the #2 fuel oil tank.

Waste Generation and Control

The Waterford Dispatchable Black Start Unit is designed to meet or exceed all existing environmental regulations. Adverse environmental impacts will be avoided to the maximum extent possible. Very little waste will be generated as a result of the operation of the Dispatchable Black Start Unit and no significant hazardous wastes are expected to be generated.

Water

The Waterford Dispatchable Black Start Unit will not require the incremental use of subsurface groundwater for construction or operation of the facility. Periodic maintenance of the turbine will require water for washing. Use of the existing infrastructure at the Waterford facility will further minimize impacts to the environment.

Storm water management is a part of a major national initiative to ensure that industrial facilities use proper design and engineering concepts to reduce storm water runoff pollution. Through a combination of structural controls, such as containment dikes, berms, and drainage systems, and by adhering to stringent safeguards to avoid unplanned release of chemicals to the environment the Waterford Dispatchable Black Start Unit is designed to minimize the quantity of storm water runoff that will come in contact with potential contaminants by enclosing all storage areas. Regular visual inspections throughout the facility will ensure that any potentially contaminated storm water will be routed as appropriate through the LPDES program. The existing storm drainage system of pipes and ditches will be expanded to include the Waterford Dispatchable Black Start Unit and will be used to convey storm water associated with industrial activity through existing LPDES program outfalls.

BMP's will be followed to prevent and control the discharge of pollutants from accidental release incidents. The comprehensive contingency plans, operating procedures, Spill Prevention Control & Countermeasures Plan (SPCC), Spill Prevention and Control (SPC) Plan, and BMP's will be update to prevent and control the discharge of pollutants resulting from accidental releases or spill events.

During construction, some temporary increase in suspended sediment loads and erosion may occur. The construction areas are of a size that an LPDES general permit for storm water discharges is required and will be obtained for the construction activities. Additionally, a Storm Water Pollution Prevention Plan, (SWPPP) will be implemented to minimize any

such impacts. Storm water in all construction areas will be managed so as to prevent adverse effects on storm water ditches and surrounding areas.

Soil, Food, and Additional Impacts

The site of the Waterford Dispatchable Black Start Unit will be located entirely within the existing Waterford Facility in St. Charles Parish, Louisiana. Louisiana 2000 census data report the parish's population as 48,072, an increase of approximately 13.0 percent from 1990 to 2000 (US Census, 2001). Significant population growth associated with the proposed project is not expected. At its peak, construction activity for the Waterford Dispatchable Black Start Unit is expected to create, directly or indirectly, about 25 to 30 new jobs in the region during construction. Most of the construction positions are expected to be filled with members of the surrounding communities (primarily the Baton Rouge and New Orleans metropolitan areas). Once constructed, existing Waterford Facility personnel will operate the facility. The Waterford Dispatchable Black Start Unit should not result in any significant residential, commercial, or industrial growth problems surrounding the facility since its construction and operation will be supported by existing residents and commercial establishments.

Sensitive Soils and Vegetation

Air pollutants can affect vegetation through two basic avenues, either direct absorption through the foliage or uptake from the soil of trace elements deposited to the soil. However, due to the limited operating scenario of the Waterford Dispatchable Black Start Unit the emissions will not adversely impact soils and vegetation in the areas.

Visibility/Opacity

Good combustion practices will be used to control NO_x and low sulfur oil will be used to control particulate matter. Use of these control methods to control emissions from the Waterford Dispatchable Black Start Unit will prevent any visibility impairment in the vicinity.

Proper precautions such as the application of water on roadways will be taken to minimize airborne dust emissions during construction.

Noise

According to the St. Charles Parish Council, the Waterford Facility is located in an area that is zoned M-2, for heavy manufacturing and industry. Also according to the St. Charles Parish Council, facility operations located within an M-2 zoning district in the parish do not have

to adhere to any parish noise restrictions. Given the existing baseline conditions, the operation of the Waterford Dispatchable Black Start Unit is not expected to result in a significant shift in the noise levels that will be considered unreasonable at any potential receptors.

SUMMARY

The potential and real adverse environmental effects of the Waterford Dispatchable Black Start Unit will be avoided through limiting the operation of the combustion turbine to be emergency in nature, the use of existing infrastructure, and collection and treatment of process and industrial storm water. In addition, experienced personnel, implementation of rigorous construction and operating procedures, and strict adherence to applicable laws and regulations will avoid or significantly minimize any adverse environmental effects. The units' location within an existing power generation plant will further minimize the potential for significant adverse impacts to the environment or the community within which the Waterford Dispatchable Black Start Unit will operate.

II. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

Response: Yes. The social and economic benefits of the proposed Waterford Dispatchable Black Start Unit greatly outweigh its minimum environmental impact. As indicated above, the proposed Waterford Dispatchable Black Start Unit will not have a significant adverse impact on the environment. The proposed Waterford Dispatchable Black Start Unit will be located in St. Charles Parish, on Waterford's existing power generation station. The proposed Waterford Dispatchable Black Start Unit will be subject to strict requirements pertaining to wastewater and air emissions. The site location and design present strong environmental advantages such as the use of existing infrastructure, an established water supply and water discharge structures, and existing rights-of-way, which minimize the potential environmental impacts.

III. Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

Response: The only alternative to constructing a new black start unit in the Amite South transmission region is to look at generation alternatives beyond the Amite South Transmission Region. This is not practical due to the length and vulnerability of the transmission service required.

IV. Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

Response: No, ELL investigated existing Entergy System equipment or locations in the Amite South region, including Paterson, Michoud, and Buras. Because of the damage resulting from Hurricane Katrina, Paterson 5, along with Paterson 3, were placed into inactive reserve status and cannot provide black start capability. In addition, Michoud 1 was placed into extended reserve shutdown and is not considered operable on short notice. Moreover, because the Paterson and Michoud plants are located in eastern New Orleans, in an area that is susceptible to flooding, coupled with the susceptibility of the transmission systems serving those units to hurricane damage, the Michoud or Paterson units were not recommended for System Black Start. ELL's Buras 8 already is a black start capable unit. However, that unit is located in Buras, Louisiana, which is a remote location far removed from the other generation that is involved in black start sequence and would require, a clear transmission path to assist in the Dispatchable sequence. Moreover, the exposed coastal location of Buras 8 and the resulting high susceptibility to hurricane damage, led to the conclusion that Buras 8 was not an acceptable black start unit. No other existing Entergy System unit in the Amite South region was determined to be capable of providing black start capability.

ELL also surveyed the existing industrial generators from the Baton Rouge area to the New Orleans area to determine if any existing non-Entergy System generators could be used for System Black Start capacity. All known industrial generators in the Amite South and Baton Rouge areas were surveyed to determine the capability of their units to operate in a black start role for the Amite South transmission region. Generation alternatives beyond this geographical area were not considered due to the length and vulnerability of transmission service required to interconnect a generator outside of the Amite South region. This survey did not identify any industrial generators that could adequately provide this black start service.

In selecting the most appropriate site, ELL developed a list of critical criteria to identify which would best serve as a Black Start location. These criteria included:

- The location of the site must be in the Amite South transmission region;

- The location should be less vulnerable to the damaging effects of hurricanes and resulting flooding;
- The site must be suitable for locating a combustion turbine generator;
- The site should be in close proximity to the designated central station unit to be started and not depend on vulnerable transmission lines to supply the start-up power;
- The designated units to be started should be capable of running on 100% fuel oil and not require natural gas fuel, delivered via pipeline, for load carrying capability (which may have limited availability during a hurricane event); and
- The site should be staffed with sufficient operations and maintenance personnel to support quick response emergency operation of the black start unit.

The Waterford facility has been selected to minimize any environmental impacts. The Dispatchable Black Start Unit will be confined to the existing facility footprint, which is a developed, ELL-owned property. The existing facility has a wastewater discharge permit, accessibility to roads, substations, transmission lines which will minimize the need to disturb additional land, thus, reducing the impact from construction activities.

V. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

Response: No. The economic, social, and environmental benefits discussed in questions II, III, and IV and the emissions measures discussed in Question I, combine to support the conclusion that additional mitigation measures are not available which would be more protective of the environment than the proposed facility without unduly curtailing non-environmental benefits. The best mitigation possible is the elimination of a potential environmental impact. The proposed project site is located within the existing Waterford Facility, which has an excellent environmental and safety record. Written plans, best management practices, and employee training are in place at the facility in order to prevent and minimize adverse impacts to the environment to the maximum extent possible. The proposed Waterford Dispatchable Black Start Unit will utilize effective pollution prevention initiatives and pollution control technologies to minimize environmental impacts from waste generation, air emissions, and water discharges.